

REMARKS

In the nonfinal Office Action mailed February 21, 2008, the Examiner objected to claims 25, 34, 36-38, 41, and 47 due to alleged informalities; and rejected claims 25-48 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,526,071 B1 (“Zorabedian”) in view of U.S. Patent Application Publication No. 2002/0054614 A1 (“Jin”).

By this response, Applicants have cancelled claim 42, without prejudice or disclaimer of its subject matter, and have amended claims 25, 34, 36-38, 41, 43, 44, and 47 to improve clarity, correct claim dependency, and to overcome the Examiner’s objection for informalities. Applicants have additionally amended claim 29 to correct a typographical error. Claims 25-41 and 43-48 remain pending and under examination. In light of these amendments and based on the arguments presented below, Applicants respectfully traverse the objection and rejection.

Objection to Claims 25, 34, 36-38, 41, and 47:

The Examiner objected to claims 25, 34, 36-38, 41, and 47 for informalities. Specifically, the Examiner required that “tuneable” should be spelled as “tunable” in claims 25, 34, 36-38, 41, and 47. *See* Office Action, p. 2. While Applicants note that “tuneable” and “tunable” are both acceptable spellings, Applicants have nevertheless amended claims 25, 34, 36-38, 41, and 47 so that “tuneable” is now spelled “tunable.” Applicants respectfully request that the objection to claims 25, 34, 36-38, 41, and 47 be withdrawn.

Rejection of Claims 25-48 under 35 U.S.C. § 103(a):

Applicants request reconsideration and withdrawal of the rejection of claims 25-48 under 35 U.S.C. § 103(a) as being unpatentable over Zorabedian in view of Jin. The Examiner has not properly resolved the *Graham* factual inquiries, the proper resolution of which is the requirement for establishing a framework for an objective obviousness analysis. *See* M.P.E.P. § 2141(II),

citing to *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), as reiterated by the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007).

While Applicants have amended independent claims 41 and 47 to improve clarity and to further demonstrate the differences between Zorabedian, Jin, and the claims, Applicants maintain that the Examiner has not properly ascertained the differences between the claimed invention and the prior art, at least because he has not interpreted the prior art and considered both the invention and the prior art as a whole. *See* M.P.E.P. § 2141(II)(B).

Zorabedian and Jin, whether taken alone or in combination, do not teach or suggest each and every element of Applicants' independent claims 25, 41, and 47. Moreover, one of ordinary skill in the art at the time of the present invention would not have had any reason to modify Zorabedian with Jin to produce the claimed invention, and such a modification would not have been predictable.

As the Examiner stated, Zorabedian does not teach that the "bandwidth FWHM of the channel allocation grid element is 2 to 8 GHZ," as recited in claim 25. *See* Office Action, p. 3. Moreover, in the laser cavity disclosed by Zorabedian, the FWHM of the grid element is shown to be larger than the claimed range of 2 to 8 GHZ. For example, in Zorabedian, the pass band at half maximum of the grid generator is approximately 0.2 nm, which corresponds to approximately 25 GHz. *See* Zorabedian, Fig. 6B, label 650, and col. 11, ll. 59-63. Note that the wavelength unit interval shown in Figs. 6A-6C in Zorabedian is equal to 0.1 nm. *See* Zorabedian, Figs. 6A-6C.

Additionally, Jin fails to cure at least this deficiency in Zorabedian. According to the Examiner, Jin discloses a "tunable laser system with an external cavity [] with the bandwidth FWHM of the channel allocation grid element is 2 to 8 GHZ." Office Action, p. 3. The passage

that the Examiner quotes in Jin, however, refers to the transfer function of the cascaded filter, which forms the tuning element of the external laser cavity. *See Jin*, par. [0039]. Moreover, the reference to the FWHM is related only to the overlapped passband, *i.e.*, the portion of the tuning element response formed by the overlapping of the peaks of the cascaded filters. *See Id.* Furthermore, the other passbands of the tuning element formed by the cascaded filters do not have and cannot have a FWHM of 1-3 GHZ, due to the offset between the FSRs of the single filters. *See Jin*, Fig. 4A. *See also*, for example, Jin, Fig. 4b, where the fourth response peak is narrow, and the other cascaded filter response peaks progressively enlarge.

Applicants further note that amended claims 25 and 41 recite, in part, “[a] plurality of periodic pass bands substantially aligned with corresponding channels of a selected wavelength grid . . .” In Jin, however, the cascaded filters are not and cannot be periodic, due to offset between the FSRs of the single filters forming the cascaded filter. For example, the optical transfer function of the cascade tunable filter disclosed in Jin is not periodic as it is the result of the combination of two filters with different FSRs and, more importantly, the FWHM of the peaks of the tunable filter is not constant, but changes across the wavelength range. *See Jin*, Figs. 2b, 3, and 4b.

In view of the reasoning presented above, Applicants submit that claim 25 is not obvious over Zorabedian in view of Jin, at least because the Examiner has not properly resolved the Graham factual inquiries, and because the cited references do not teach or suggest each and every element independent claim 25. Moreover, the Examiner has not shown that the results of combining Zorabedian with Jin would have been predictable. *See M.P.E.P. § 2143.01(III).* Thus, the Examiner has not properly ascertained the differences between the claimed invention and the prior art. Independent claim 25 should therefore be allowable.

Independent claims 41 and 47, while of different scope, recite elements similar to those of independent claim 25. For at least the same reasons set forth in connection with independent claim 25, independent claims 41 and 47 should also be allowable. Dependent claims 26-40, 43-46, and 48 should be allowable at least by virtue of their respective dependence from base claim 25, 41, or 47. Applicants therefore respectfully request withdrawal of the rejection of claims 25-48 under 35 U.S.C. § 103(a).

Conclusion:

Applicants request reconsideration of the application and withdrawal of the objection and rejection. Pending claims 25-41 and 43-48 are in condition for allowance, and Applicants request a favorable action.

The Office Action contains a number of statements reflecting characterizations of the related claims. Regardless of whether any such statements are identified herein, Applicants decline to automatically subscribe to any such statements or characterizations.

If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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